

# National Biosolids Partnership EMS Internal Audit Report

City of Fort Worth Water Department

Village Creek Wastewater Treatment Plant

Fort Worth, Texas

Audit Performed By:

City of Fort Worth Internal Audit Department

Audit Dates: October 13 to November 11, 2004

Report Date: December 22, 2004

References:

NBP EMS Elements

National Manual of Good Practice for Biosolids

NBP – third Party Verification Auditor guidance – November 2002

Guidance Manual for Biosolid Beneficial Reuse/Recycling (2004)

Fort Worth Water Department Environmental Management System (EMS)

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Maebell Brown, P.E., Assistant Water Director/Pollution Control

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Gary F. Rockers, Biosolids Manager

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Eric N. Bundy, CPA, CFE, Lead Auditor

## **BACKGROUND**

In August 2000, the City of Fort Worth signed a letter of understanding with the National Biosolids Partnership (NBP) to participate in a Demonstration Project to test the NBP's Environmental Management System (EMS) blueprint by implementing an EMS system for the City's biosolids program. The City's EMS system is documented by the Village Creek Wastewater Treatment Plant (VCWWTP) EMS Manual. The EMS manual provides an overview of the City of Fort Worth's biosolids program. It provides a general description of the applicable policies, programs, plans, procedures, and management practices that the City has established for each of the biosolids activities that it directly or indirectly controls at each critical control point within the biosolids value chain, including activities performed by contractors.

The City's goal in participating in this project is to obtain Certification from the NBP. The NBP is a not-for-profit alliance formed in 1997 with the Association of Metropolitan Sewerage Agencies (AMSA), Water Environment Federation (WEF), and the Environmental Protection Agency (EPA) to advance environmentally sound and publicly accepted biosolids management practices. Certification by the NBP indicates that the participating City has met the high standards established by the NBP.

Obtaining certification is a multi-step process. The city must conform its wastewater treatment process to the NBP Manual of Good Practice for Biosolids. The City is then required to develop a EMS Guidance Manual that documents the seventeen elements that address the requirements of the NBP Biosolids program. The guidance manual is then submitted to the NBP for a Biosolids EMS Status Review. The status review is a self-assessment tool to help the City determine if their EMS is operational and to determine the level of conformance of their EMS with the NBP Elements. This step was completed on February 3, 2004.

The next step in the certification process is to have a Third Party Verification Audit. This Third Party Verification Audit will identify any major or minor nonconformances and document any on the spot corrective actions or planned corrective actions. Prior to the City receiving a Third Party Verification Audit, an internal audit is performed with the same scope and objectives as the Third Party Verification Audit. The internal audit allows the City to correct any identified non-conformances prior to the Third Party Verification Audit, thus expediting the certification process.

## **SCOPE AND OBJECTIVES**

The scope of our audit covered all seventeen EMS elements throughout the biosolids value chain. Our objective was to analyze the EMS for biosolids to determine whether the Village Creek Wastewater Treatment Plant is effectively meeting its Biosolids Management Policy, program requirements, and program goals and objectives.

## **METHODOLOGY**

We followed the guidelines provided in the NBP Third Party Verification Auditor Guidance manual dated November 2002. We reviewed each of the seventeen EMS Elements and determined if they complied with the NBP Elements for an EMS.

## **OVERALL EVALUTION**

Based on our audit results we feel that the Village Creek Wastewater Treatment Plant is effectively meeting its Biosolids Management Policy, program requirements, and program goals and objectives.

## **AUDIT PARTICIPANTS**

The following employees and contractor personnel were contacted during the course of our audit:

Frank Crumb	Acting Water Director	817-392-8207
Maebell Brown	Interim Assistant Water Director	817-392-4978
Gary F. Rockers	Biosolids Manager	817-392-4965
Jody Zabolio	Plant Engineer	817-392-4963
Madeline Rafalko	Engineer	817-392-4926
Gary Burton	Operations Superintendent	817-392-4966
Clayton Fleming	Chief Operator	817-392-4901
Gary Lagassey	Chief Operator	817-392-4901
Roy Billups	Acting Maintenance Supt.	817-392-4974
Steve Hodge	Training Specialist	817-392-4927
Mary Gugliuzza	Public Education Coordinator	817-392-8253
Scheretta Scott	Public Information specialist	817-392-8244
Buster Fichera	Pre-Treatment Manager	817-392-8495
Jerry Pressley	Pre-Treatment Supervisor	817-392-8281
Laly Joseph	Pre-Treatment Supervisor	817-392-8040
Carolyn Jones	Water Laboratory Supervisor	817-392-6401
Daniela Hill	Quality Control Specialist	817-551-6401
Susy Michaiels	Quality Control Specialist	817-551-6401
Stacey Walters	Water Laboratory Manager	817-392-7008
Richard Talley	Regulatory/environmental Coord.	817-392-8203
Tom Berth	Renda Environmental (Contractor)	817-392-9391
Raquel Giovanna	Renda Enviromental (Contractor)	817-392-9391
Leonard Ramirez	Dewatering Facility Manager	817-538-6459
Arturo Vasquez	Driver	817-571-9391
Rigoberto Valdez	Land application Crew	817-571-9391
Eric Reed	Driver	817-571-9391
Dennis Haar	Halff and Associates, Inc. (Eng.)	817-392-1422

## **SUMMARY OF AUDIT RESULTS**

The Following Summary of Audit results addresses each of the seventeen EMS Elements, the documents reviewed; observations made and audit results and findings. Under the Observations section, we addressed each Minimum Conformance Requirement (MCR) outlined in the NBP Third Party Verification Auditor Guidance, dated November 2002. We addressed VCWWTP's actions taken to meet the MCR's. We also identified each MCR and indicate our opinion as to VCWWTP's conformance with the MCR. Major or minor nonconformances are addressed and auditee responses are included.

### **ELEMENT 1 - Documentation of EMS for Biosolids**

#### **Documents reviewed**

EMS Procedure 1, NBP Third Party Verification Auditor Guidance – November 2002, Signature page for Approval of VCWWTP EMS Manual.

#### **Observations**

MCR 1.1 - VCWWTP has documented in their EMS Manual the EMS for Biosolids that describe the applicable policies, programs, plans, procedures, and management practices of their biosolids EMS.

MCR 1.2 - The VCWWTP EMS manual did not have the required approval signatures at the time of this audit but they were obtained while this audit was in process.

MCR 1.3 – VCWWTP has in their EMS Manual included their Biosolids Management Policy and EMS Procedures as required by the EMS Elements.

MCR 1.4 – VCWWTP's EMS manual includes cross-reference to guidelines for Public Participation in Element 6, Communications in Element 9, and Emergency Preparedness and Response Programs and Plans in Element 11, as required by the EMS Elements.

MCR 1.5 - VCWWTP has documented in Element 3, the critical control points throughout the value chain that are consistent with the NBP Manual of Good Practice, with the exception of addressing the Incineration Value Chain and its related Critical Control Points. The VCWWTP uses an incinerator only for the burning of oils and grease that rise to the top during the primary treatment stage. There is no incinerator processing of biosolid at the disposal stage.

MCR 1.6 - VCWWTP's EMS Manual includes or cross-references all operational controls, procedures, processes, and other management methods used to achieve and maintain compliance with legal and other requirements.

MCR 1.7 – The EMS manual identifies the biosolids management activities assigned to and performed by contractors.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 1, with the exception of the Corrected Nonconformances listed below.

#### **Corrected Nonconformance**

The VCWWTP EMS manual, Element 1 did not make reference to the EMS Minimum Conformance requirements.

#### **Auditee Response**

Revised text to include the list of minimum conformance items in EMS Auditor Guidance Chapter 6, pg. 42 of 75.

#### **Corrected Nonconformance**

Minimum conformance standard 1.2 was not met. The EMS Manual was not approved by a level of management with the authority to commit people and resources to the biosolids management activities.

#### **Auditee Response**

Signatures were obtained during the audit, from the appropriate level of management.

### **ELEMENT 2 - Biosolids policy**

#### **Documents reviewed**

EMS Procedure 2, Biosolids Policy Statement, NBP Code of Good Practice, NBP Manual of Good Practice for Biosolids.

#### **Observations**

MCR 2.1 - VCWWTP has established a biosolids management Policy that commits VCWWTP to following the principles of conduct set forth in the Code of Good Practice and includes other biosolids commitments that VCWWTP has chosen to adopt.

MCR 2.2 - VCWWTP has communicated its biosolid management policy to employees, contractors and interested parties. We reviewed documentation supporting compliance with this MCR.

MCR 2.3 – We reviewed documentation that supports that VCWWTP has incorporated their Biosolids Management Policy into the Organization’s Biosolid Programs, Procedures, and Practices.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR’s established by the NBP for Element 2.

### **ELEMENT 3 - Critical Control Points**

#### **Documents reviewed**

EMS Procedure 3, EMS Master Table – EMS Element 3, Organization Charts, Operational Control Procedures, Desk Procedures, Monitoring Reports, and the TPDES Permit. 1111

#### **Observations**

MCR 3.1 – VCWWTP has identified and documented, within the text of Element 3, the Critical Control Points that are applicable to their biosolids management activities throughout the biosolids value chain. They are consistent with those identified in the National Manual of Good Practice and other authoritative sources.

MCR 3.2 – VCWWTP EMS Master Table – EMS Element 3, identifies all actual or potential environmental impacts for each critical control point.

MCR 3.3 – VCWWTP’s EMS Element 3 requires that they do an annual review of the Critical Control Points and make any necessary changes to the Critical Control Points when new or modified systems are brought on line.

MCR 3.4 – VCWWTP maintains the EMS Master Table – EMS Element 3.0, which links each Critical Control Point and its potential environmental impacts with the corresponding operational controls.

MCR 3.5 - EMS Element 3 requires that after the organization has successfully completed a third party verification audit, they will provide written notification to the NBP (and the assigned third party verification auditor) if critical control points or environmental impacts are changed for the new system. This was not documented in VCWWTP’s EMS.

A considerable amount of the time devoted to this audit was used reviewing EMS Element 3. The EMS Master Table – EMS Element 3.0 which was developed by VCWWTP, addresses the entire Biosolids Value Chain for all processing functions at the

Facility including the Operational Controls that are addressed at Element 10. The EMS Master Table shows the Biosolids Value Chain and the related Critical Control Points, Roles and Responsibilities, Environmental Impacts, Operational Controls, Reference to the Operational Control Procedures, the location of the reference, the extent of the Monitoring activity for each Critical Control Point, the frequency of the monitoring activity, the responsible department and reference to any authoritative government document (such as the TPDES permit that gives the plant the general authority to operate).

We obtained the names of the responsible personnel for each Critical Control Point. We met with these individuals and conducted interviews and received presentations as to how a process worked, how it was controlled and monitored. We performed walkthroughs of the operational areas and obtained copies of documents supporting the procedures used for the process as well as documentation supporting the monitoring and testing of the system or process being reviewed. All areas in the biosolids value chain were reviewed, which included the Wastewater Pretreatment, Primary Treatment, Secondary Treatment, Advanced Treatment and the biosolids processing that is performed by a contractor. We also reviewed the subsidiary processes, such as, using gases produced by the digesters to run electric turbines that produce electricity for the facility. We also reviewed the Incinerator process used to burn grease and gas that is produced during the Primary Treatment Stage.

## **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 3, with the exception of the Corrected Nonconformances listed below.

### **Corrected Nonconformance**

We noted a number of instances where the reference or terminology on the EMS Master table was incorrect; the CCP titled "Industrial User Discharges " should be preceded by the word "Significant", the "Operational Control Procedure" on the EMS Master Table referred to a "Training Manual" when in fact the reference should have been to a specific Standard Operating Procedure (SOP), the frequency of monitoring activity showed the minimum instead of actual practice which was more frequent. It was also noted the contractors SOP's did not have approval signatures.

### **Auditee Response**

We are still making minor revisions to the master table to insure all critical control points controlled by the contractor are labeled accordingly, all critical control procedures are correct, and various other small changes.

## **Corrected Nonconformance**

The text of Element 3 did not indicate that the NBP and the third party auditor would be notified when following any operational change that requires a change to the identified critical control points or environmental impacts associated with the critical control points.

## **Auditee Response**

Revised text to indicate that after process change the NBP and the 3<sup>rd</sup> party auditor will be notified of the change of critical control point and/or environmental impact.

## **ELEMENT 4 – Procedures for Tracking Legal and other Requirements**

### **Documents reviewed**

EMS Procedure 4, matrix of Regulations Applicable to the VCWWTP Biosolids Value Chain – EMS Element 4.0, Code of Federal Regulations (CFR), Clean Water Act, Federal Motor Carrier Safety Regulations, Texas Administrative Code, Texas Water Code, Texas Pollution Discharge Elimination System Program Permit (TPDES), Texas Transportation ACT, and the City of Fort Worth Code of Ordinances.

### **Observations**

MCR 4.1 - VCWWTP has incorporated procedures in EMS Procedure 4, which address the legal and other requirements that meet the MCR's set forth in the EMS Verification Audit Guidance for Element 4. The biosolids Manager and the Environmental/Regulatory Coordinator are responsible for identifying and tracking legal and other requirements that are applicable to VCWWTP's biosolids management activities.

MCR 4.2 - VCWWTP has established and maintains records of all applicable legal and other requirements.

MCR 4.3 - VCWWTP has established a matrix of "Regulations Applicable to the VCWWTP Biosolids Value Chain". This matrix identifies the Federal, State, and Local Regulations that apply and cross-references them to the Area of Influence within the Biosolids Value Chain that they relate to.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 4, with the exception of the Corrected Nonconformance noted below.



## **Corrected Nonconformance**

The titles on the biosolids value chain are not consistent with the EMS Master Table under Element 3.

## **Auditee Response**

Revised table so biosolid value chain titles are consistent with the master table in element 3. Changed “Land Application” to “Biosolids Use and Disposal Alternatives – Agricultural Land Applications”.

## **ELEMENT 5 – Biosolids Goals and Objectives**

### **Documents reviewed**

EMS Procedure 5, Biosolids Goals & Objectives – EMS Element 5.0, NBP National Manual Of Good Practice, NBP Third Party Verification Auditor Guidance – November 2002, Fort Worth Water Department Business Plan – Major Initiative – Wastewater Treatment.

### **Observations**

MCR 5.1 - VCWWTP has established measurable biosolids program goals and related objectives for its biosolids management activities. They have identified the responsible party(s) for all goals and established a schedule for the review of the goals and objectives.

MCR 5.2 - VCWWTP has reflected in their program goals and objectives priorities for improving environmental performance of biosolids management activities based on critical control points. They have also identified potential environmental impacts, legal and other requirements and applicable best management practices as defined in the National Manual of Good Practice and other authoritative sources on biosolids management.

MCR 5.3 - VCWWTP considered input from interested parties in developing their program goals and objectives. These parties included customers, regulators, local residents, the media, environmental groups, and the general public. A proactive public participation approach was used.

MCR 5.4 - VCWWTP goals and objectives are integrated with other EMS elements and biosolids management activities. The biosolids Goals and Objectives Summary, at EMS Element 5 was not linked to the EMS Four Key Outcomes.

MCR 5.5 - VCWWTP has developed goals and objectives using SMART criteria.

MCR 5.6 – VCWWTP reviews and updates as necessary goals and objectives on an annual basis as part of the Water Department Comprehensive Business plan review process.

MCR 5.7 - Element 5 provides that, as part of the master planning process and in its yearly business plan, the Wastewater Treatment Division reviews existing goals and objectives and establishes new long-term goals and objectives and supporting short-term goals that are consistent with the NBP National Manual of Good Practice.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 5, with the exception of the Corrected Nonconformance listed below.

### **Corrected Nonconformance**

The Biosolids Goals and Objectives Summary of EMS Element 5 did not link the Goals and Objectives to the 4 Key Outcomes established by the NBP.

### **Auditee Response**

We revised the table in the Biosolids goals and objectives to include a link to the 4 desired outcomes established by the NBP.

## **ELEMENT 6 – Public Participation in Planning**

### **Documents reviewed**

EMS Procedure 6, PowerPoint presentation – Environmental Management System Implementation, NBP 2001-2002 annual Report, Biosolids Beneficial Recycling Program flyer.

### **Observations**

MCR 6.1 – VCWWTP has implemented a proactive public participation approach to involve interested parties in its biosolids Management program and EMS planning process. This has been documented in VCWWTP's EMS Procedure 6.

MCR 6.2 – VCWWTP requires the organization's commitment to the ten principles in the Code of Good Practice, including a plan for independent third party verification audit of the conformance with EMS Elements.

MCR 6.3 – VCWWTP feels they have selected an approach that they feel is consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances.

MCR 6.4 – VCWWTP EMS Procedure 6 provides guidance for providing interested parties with meaningful opportunities to express views and perspectives relative to biosolids management activities, including concerns about environmental impacts, biosolids program performance, and potential areas for improvement.

MCR 6.5 – VCWWTP EMS Procedure 6 indicates that input was solicited from interested parties in initially developing program goals and objectives during the EMS implementation and in updating them as part of periodic reviews of biosolids management program performance.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 6, with the exception of a potential Minor Nonconformance listed below.

### **Minor Nonconformance**

Based on our review it appears that VCWWTP is currently not doing enough to meet the requirement of MCR 6.4. As noted under MCR 6.3, VCWWTP feels they have an approach that is consistent with their unique environment. We recommend that this requirement be monitored closely.

### **Auditee Response**

The City of Fort Worth has developed multiple options covering public participation efforts, to provide the public with a better understanding of biosolids in general and the EMS. The City has considered the history of local support for or in opposition to biosolids practices in the North Texas Area. The public participation efforts go beyond and are consistent with the degree of past and current community interest and atmosphere of biosolids beneficial reuse by land application.

The City has put in place a varied public participation effort that extends over the full biosolids value chain, including public participation activities performed by our contractor. However, the City is flexible to modify, add, change, etc. public participation activities that involve interested parties, if conditions change.

## **ELEMENT 7 – Roles and Responsibilities**

### **Documents reviewed**

EMS Procedure 7, Table 1: Roles and Responsibilities – EMS Element 7, Appendix 7a: City of Fort Worth Biosolids Organizational Chart, Job Descriptions, Contract with Renda Environmental, Inc, Renda Operating Plans.

### **Observations**

MCR 7.1 – The Water Department has established and maintains Job Descriptions for all roles and responsibilities for the biosolids management program and activities. These job descriptions define and document the roles and responsibilities of employees performing biosolids management activities and EMS functions.

MCR 7.2 - Gary F. Rockers, Biosolids Manager, has been given overall responsibility for ensuring that a biosolids management program and EMS are implemented and maintained.

MCR 7.3 - The City of Fort Worth has provided the human, technical, and financial resources necessary to effectively execute the assigned responsibilities.

MCR 7.4 - Contractors roles and responsibilities are defined in contract documents and contractor Operating Plans referenced to in the contract.

### **Audit Results and Findings**

Audit Results VCWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 7.

## **ELEMENT 8 - Training**

### **Documents reviewed**

EMS Procedure 8, TCEQ approved Training Course list, Notice of Treatment Plant Operator Training Schedule, Class Roster for Basic Wastewater and Water Utilities Calculation training classes, sign-in sheet for Basic Wastewater Unit 1 Class and Index of Contractor's SOP's covering contractor employee training.

### **Observations**

MCR 8.1 - VCWWTP has established and is maintaining a training program to ensure that employees responsible for specific biosolids management activities and for the implementation of various EMS functions are competent in performing their assigned tasks and duties. The training program provides general awareness of the EMS and how

each employee's assigned roles and responsibilities relate to the entire biosolids value chain.

MCR 8.2 - VCWWTP training program includes both existing employees and new and reassigned employees.

MCR 8.3 - VCWWTP maintains records of individual employee training delivered and completed.

MCR 8.4 - VCWWTP's EMS Element 8 requires that all contractors "employ only such superintendents, foremen, and workmen who are careful, competent, and fully qualified to perform the duties or task assigned to them..." The Contractors have specific SOP's covering training on the roles and responsibilities of contractor employees in the biosolids management activities.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 8.

## **ELEMENT 9 - Communications**

### **Documents reviewed**

EMS Procedure 9, Biosolids Beneficial Recycling flyer, Beneficial Reuse of Biosolids presentation, NBP 2001-2002 Annual Report, Biosolids Recycling flyer,

### **Observations**

MCR 9.1 – VCWWTP, EMS Procedure 9 provides for the establishment and maintenance of a proactive communications program that provides ongoing information about biosolids management program and EMS to interested parties and the public, consistent with local circumstances, the method of biosolids management, public communications history, and degree of current interest in its biosolids management activities.

MCR 9.2 – VCWWTP has documented at Appendix 9a the "Procedure for Addressing Biosolids Complaints and Request for Information" from interested parties about its biosolids management activities and EMS. The procedure defines a process for assuring a timely and complete response to inquiries by interested parties.

MCR 9.3 - VCWWTP has made the following information about the organization's biosolids management program and activities available to interested parties:

The biosolids management policy

The applicable legal and other requirements

The biosolids program goals and objectives for continual improvement

The periodic Biosolids Management Program Performance Report, and

VCWWTP will make available a detailed report of the independent, third Party EMS Verification audit results, when they are completed.

MCR 9.4 - VCWWTP has defined the roles and responsibilities of outside contractors in the Communications Program.

MCR 9.5 - VCWWTP has communicated relevant information about the biosolids management activities and biosolids Management Policy, and all seventeen (17) elements of the EMS to employees and outside contractors, consistent with assigned roles and responsibilities.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 9.

## **ELEMENT 10 – Operational Control of Critical Control Points**

### **Documents reviewed**

EMS Procedure 10, EMS Master Table – EMS element 3.

### **Observations**

MCR 10.1 - VCWWTP has developed and implemented standard operating procedures, work management practices and other appropriate methods at all critical control points throughout the biosolids value chain to effectively manage potential environmental impacts.

MCR 10.2 - VCWWTP has incorporated all legal and other adopted requirements in the operational controls of critical control points.

MCR 10.3 - VCWWTP has considered applicable best management practices as defined in various authoritative sources on biosolids management such as the National Manual of Good Practice, Water Environment Federation Manuals of Practice.

MCR 10.4 - VCWWTP has included appropriate preventative maintenance procedures and work management systems for maintaining equipment instrumentation, vehicles, and other treatment technology and process control systems associated with its biosolids management activities.

MCR 10.5 - VCWWTP requires that contractors establish their own operational controls consistent with their roles and responsibilities in biosolids management activities.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 10, with the exception of the Corrected Nonconformance noted below.

### **Corrected Nonconformance**

EMS Procedure 10 does not refer to the legal requirement set forth in Element 4.

### **Auditee Response**

Revised text to reference legal requirement in element 4.

## **ELEMENT 11 – Emergency Preparedness & Response**

### **Documents reviewed**

EMS Procedure 11, EMS Procedure 3, Critical Control Points Matrix, City of Fort Worth Emergency Management Plan, Village Creek Wastewater Treatment Plant Emergency Response Plans and Chemical Spill Response Plans.

### **Observations**

MCR 11.1 - VCWWTP has established and maintains Emergency Preparedness and Response plans and procedures to assure effective response to accidents and emergency situations associated with biosolids management activities

MCR 11.2 - VCWWTP reviews and evaluates the effectiveness of the emergency preparedness and response procedures, including communications systems and revises them as necessary.

MCR 11.3 - VCWWTP has emergency response equipment on site readily available within minimum response time.

MCR 11.4 – VCWWTP contractually requires contractors to establish and maintain Emergency Preparedness and Response plans and procedures to assure effective response to accidents and emergency situations associated with biosolids management activities.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 11.

## **ELEMENT 12 – EMS Documentation and Document Control**

### **Documents reviewed**

EMS Procedure 12, TPDES Permit – Required Report Summary – EMS Element 12.0, Level 4 documentation master List – EMS element 12.0.

### **Observations**

MCR 12.1 - VCWWTP has established and maintains documentation, documents and records for the Biosolids Management program including documentation of the seventeen elements of its EMS.

MCR 12.2 - VCWWTP has established document control procedures in EMS Procedure 12. They have maintained document control procedures and practices to ensure that their Biosolids Management program documentation and documents are a) available and can be easily located, b) created following established document creation protocols, c) kept up to date through periodic reviews and revisions, d) properly marked with version number, effective date(s), and references to replaced or superseded versions, and e) approved by authorized personnel.

MCR 12.3 - VCWWTP has established and maintains records of biosolids management activities and ensures that they are: a) available and easily located, and b) retained for the specified period of time.

MCR 12.4 - VCWWTP has established documentation, document control and record requirements for biosolids management activities conducted by its contractors in Service Agreements, and has incorporated these requirements into its EMS for biosolids.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 12.



## **ELEMENT 13 – Monitoring and Measurement**

### **Documents reviewed**

EMS Procedure 13, TPDES Permit No. 10494-013, monitoring report - Special Operational Summary, Monitoring report Aeration Basin No. 3, monitoring report – Anaerobic Digester no. 8, Monthly Effluent Report, Discharge Monitoring Report, 2004 Emissions Data.

### **Observations**

MCR 13.1 - VCWWTP has established and maintains regular monitoring and measurement procedures and practices for all biosolids management activities to assure compliance with applicable legal and other requirements, measure biosolids program performance at critical control points, and track progress toward achieving program goals and objectives.

MCR 13.2 - VCWWTP records monitoring and measurement results and maintains records as established in the record keeping procedures under Element 12.

MCR 13.3 - VCWWTP requires contractors to establish and maintain regular monitoring and measurement procedure and practices for all their assigned biosolids management activities, as defined in their service agreement.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 13.

## **ELEMENT 14 – Nonconformances: Preventive & Corrective Action**

### **Documents reviewed**

EMS Procedure 14, Corrective Action Notice dated 9/16/04.

### **Observations**

MCR 14.1 - VCWWTP has developed and implemented at EMS Element 14, a procedure to investigate any noncompliance with applicable regulatory requirements and/or nonconformances with internal EMS procedures identified during routine monitoring and measurement or periodic internal EMS audits.

MCR 14.2 - VCWWTP has documented in EMS Procedure 14 of its EMS manual the steps necessary to identify the cause and take actions to correct the nonconformance.

They have also implemented a procedure to document the necessary corrective actions taken to prevent recurrence.

MCR 14.3 – VCWWTP has developed and implemented a procedure to document the necessary actions taken to prevent a recurrence.

MCR 14.4 - VCWWTP has developed corrective action plans to address nonconformances identified during routine monitoring and measurement and identify the nonconformances, the root cause(s), and the corrective action being taken. The corrective action plan identifies changes to the policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances.

MCR 14.5 – VCWWTP has established a formal corrective action plan to address findings of internal EMS audits and audits conducted by third parties. The plan documents corrective action plans and describes what actions will be taken to address the audit findings, the individuals responsible, the estimated completion date, and the required resources to develop and implement corrective and preventative action. The corrective action plan identifies changes to the policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances. They document these changes in the corrective action plan and in the EMS Manual and other relevant EMS documentation.

MCR 14.6 - VCWWTP tracks the progress in completing the corrective actions and periodically updates their records to reflect completion.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 14. There was only one Corrective Action Notice, dated 9/16/04, on file. We reviewed this Notice and found it to be in compliance with the requirements outlined in EMS Procedure 14.

## **ELEMENT 15 – Biosolids Program & EMS Performance Report**

### **Documents reviewed**

EMS Procedure 15, EMS Performance Report FY 2002-03, EMS Performance Report FY 2003-04.

### **Observations**

MCR 15.1 - VCWWTP has established the requirement for an annual written Biosolids Management Program Report summarizing the performance of the City of Fort Worth's biosolids management program and EMS to drive continued improvement. The report contains appropriate summaries of monitoring, measurements and results that

demonstrate the performance of the biosolids program relative to its goals, objectives and legal requirements, including those biosolids management activities conducted by contractors. The report also provides summaries of performance relative to other voluntarily adopted requirements, and the organization's progress toward achieving its biosolids program goals and objectives. A summary of its independent third party EMS verification audit results will be provided after its completion.

MCR 15.2 – VCWWTP makes their Performance report available to the public. The report is placed on the City's WEB page, is published for distribution and a copy included in the land application packets given to all potential landowners in the biosolids program.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 15.

### **ELEMENT 16 – Internal EMS Audit**

#### **Documents reviewed**

EMS Procedure 16, NBP National Manual of Good Practice for Biosolids, Third party Verification Auditor Guidance – November 2002, NBP EMS Auditing Workshop – Summary Report, January 22-23, 2004. NBP Issue Papers #1 to #10.

#### **Observations**

MCR 16.1 - VCWWTP has documented in their EMS Procedure 16 the establishment and maintenance of an internal audit program to periodically analyze the EMS for biosolids and determine whether it is effectively meeting its biosolids management policy, program requirements and biosolids program goals and objectives. The internal EMS audit program defines the scope, frequency, and methodology of the audits, assigns responsibility for conducting the audits and communicating their findings, and designates individuals to whom these findings are to be conveyed. The procedures require the internal audit to evaluate the organization's performance relative to established biosolids program goals, objectives and performance measures. The procedure requires that the internal EMS audit program shall cover all the organization's biosolids management program activities including those performed by contractors.

MCR 16.2 - VCWWTP procedures require that the EMS audit results be reported to the organization's management in a way that they can take action to make necessary modifications to the EMS and biosolids management program. The person responsible for the biosolids management program shall develop, or delegate the development of, a comprehensive corrective action plan addressing each nonconformance identified by an internal audit.

MCR 16.3 - VCWWTP procedures require that at a minimum certain documents relating to the audit be maintained: description of the audit methodology, protocol, scope, and schedule; identification of lead auditor, qualifications, and description of roles and responsibilities of auditors, management representatives, and others that may participate in, review, or be expected to act upon the audit; and corrective and/or preventive action plans prepared resulting from an audit, and any related changes made to policies, plans, procedures, and work practices that occur as a result of an audit's findings, evaluation, or follow-up actions.

### **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 16.

## **ELEMENT 17 – Periodic Management Review of Performance**

### **Documents reviewed**

EMS Procedure 17.

### **Observations**

MCR 17.1 – VCWWTP's EMS Procedure 17 requires that each year in November following the verification audits all responsible personnel, as described in EMS Procedure 17 will meet and review at the least, the latest Biosolids program and EMS Performance Report, Internal Audit Results, Third Party Verification Audit Results, and all outstanding Corrective Action Notices. The meeting will use the EMS Performance Report requirements as described in EMS Element 15 as a guide for the review.

MCR 17.2 - VCWWTP in the text of EMS Procedure 17 states the Biosolids Manager will assign a person to record and distribute minutes for the meeting to document the issues discussed and the decisions made. Any changes in policy, EMS elements, procedures, etc. will be documented according to the document control methods discussed in Element 12.0 The Assistant Water Director for Wastewater Treatment will approve each of these changes. All nonconformance issues will be handled according to the procedure established in Element 14.0.

MCR 17.3 requires that VCWWTP assign a lead person or persons to be responsible for organizing and conducting the review. VCWWTP identifies in the text of EMS Procedure 17.0 the Water Director, Assistant Water Director for Wastewater Treatment, Biosolids Manager, Operations Superintendent, Laboratory Manager, Pretreatment Manager, and the Biosolids Contractor will be responsible for the periodic review of the biosolids management program and EMS. Gary Rockers is identified as the lead person responsible for organizing and conducting the review.

## **Audit Results and Findings**

Audit Results VCWWTP appears to have complied, in all material respects, to the MCR's established by the NBP for Element 17, with the exception of the Corrected Nonconformance noted below.

### **Corrected Nonconformance**

The text of EMS Procedure 17 does not reference the re-verification audit sequence noted in Issue Paper # 9.

### **Auditee Response**

Revised text to reference re-verification audit sequence in Issue paper # 9: Internal, Interim, and Re-verification Audits and to establish the management review will take place each year in November.